AD/ORD 25X1

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DATE February 18, 1964

Department of Defense Instruction

DDR&E

SUBJECT Standards for Documentation of Technical Reports under the DoD Scientific and Technical Information Program

Ref: (a) DoD Instruction 5129.43, "Assignment of Functions for the Defense Scientific and Technical Information Program," January 22, 1963

I. PURPOSE AND OBJECTIVE

A. This Instruction supplements reference (a); its primary purpose is to simplify and improve document control and cataloging procedures for technical reports derived from research and development (R&D) activities of the Department of Defense.

B. The objectives and concept of this Instruction and the enclosed R&D Report Documentation Standards are as follows:

1. Scientific and technical information is a primary product of research and development activities. Effective handling of the scientific and technical information is an integral part of the work performed under R&D.

2. Effective communication of scientific and technical information can be achieved, in part, by timely preparation and primary distribution of technical reports prepared by the organization performing the R&D. Handling of reports by receiving organizations can be simplified and improved if standard documentation procedures are adopted.

3. Long-term availability of the scientific and technical information to scientists and engineers not included in the primary distribution of a technical report depends upon efficient, comprehensive systems for storage and retrieval of technical reports containing the scientific and technical information.

4. Both the primary distribution of technical reports and the documentary processes for storage and retrieval of the reports can be made more efficient if all DoD technical reports adhere to a single standard for presentation of data used in descriptive cataloging and in the storage and retrieval of reports.

II. APPLICABILITY AND SCOPE

A. The provisions of this Instruction apply to the Military Departments and to other DoD components performing R&D. This Instruction covers technical reports prepared by in-house laboratories, contractors, subcontractors, and grantees.

On file OSD release instructions apply. Approved For Release 2005/03/30 : CIA-RDP79B00314A000100030005-3

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B. Progress reports containing scientific and technical information of more than transient interest are included within the scope of this Instruction as a special form of technical report; administrative and managerial progress reports are not included. However, the Document Control Data form provided in this Instruction may be used in any report where subsequent storage and retrieval or bibliographic control is desirable.

C. It is not intended that the provisions of this Instruction affect the content, mode of presentation, or editorial style of the technical report.

III. DEFINITIONS

A. Technical reports are documents written for the permanent record to document results obtained from and recommendations made on scientific and technical activities relating to a single project, task, or contract or relating to a small group of closely-connected efforts within the DoD R&D program.

B. An abstract is a brief and factual summary of a document. An indicative abstract tells what the author wrote about. It refers to the purpose, the method, the results, and the conclusions. For documentation purposes, it is highly desirable that the abstract of classified reports be unclassified. Therefore, the abstract should include only descriptive statements with the lowest possible security classification.

IV. PROCEDURES

A. Internal Technical Reports. All DoD components responsible for R&D work shall arrange for inclusion of a DD Form 1473, Document Control Data - R&D (Attachment 1 to Enclosure 1), in each copy of all technical reports issued on work performed in DoD laboratories and offices.

B. Contractor, Subcontractor, and Grantee Technical Reports.

1. All DoD scientific, technical and/or military personnel responsible for the management and direction of R&D work shall indicate in their statement of procurement requirements that a completed DD Form 1473 shall be included in each copy of all technical reports prepared by their contractors, subcontractors, and grantees.

2. It is planned to make the appropriate modifications to ASPR or other DoD procurement instructions so as to require the

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use of DD Form 1473 by contractors, subcontractors, and grantees. Failure to include the Form in DoD scientific and technical reports shall bring into effect the provisions of 9-207 (Data-Withholding of Payment) of the Armed Services Procurement Regulations.

V. EFFECTIVE DATE AND IMPLEMENTATION

A. This Instruction is effective immediately.

B. Two (2) copies of implementing documents will be forwarded to the Director of Defense Research and Engineering within ninety (90) days.

Harold Brown
HAROLD BROWN
Director of Defense Research & Engineering

Enclosure - 1
Standards for Documentation
of Technical Reports

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STANDARDS FOR DOCUMENTATION OF TECHNICAL REPORTS

I. Mechanical Specifications

A. Technical reports will be printed in accordance with the current standards for U. S. Government printing. As of this date, these are contained in "Government Printing & Binding Regulations," published by the Joint Committee on Printing, Congress of the United States; April 1, 1963; No. 15.

B. All DoD technical reports are subject to further duplication by photographic processes. This requirement will be kept in mind during preparation and reproduction. Specifically:

1. Reproduced text material will be in the form of black characters on white opaque paper.

2. Halftones will be kept at an absolute minimum consistent with the communication of technical information; black-and-white linework is preferred. Linework will be sharp and clear, of consistent density, and reproduced on white opaque paper. Color will be used only when it serves a functional purpose.

3. Material presented in the form of charts, tables, or graphs will appear in a final reproduced size large enough to be clearly legible. Graph coordinate rulings or grid lines will be spaced as far apart as practical.

II. Document Control Data - R&D

The attached DD Form 1473 will be completed and provided as the last page of each DoD technical report. Instructions for preparation are contained on the form.

III. Optional Data

A. If possible, the important terms (key words) shall have their roles and weights listed under the column headings "A", "B" and "C" which in turn shall refer to paragraphs in the Abstract.

B. The "role indicators" shall be numbered from 0 (zero) through 10 (ten) and shall have the following meanings:

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1. The term indexed in Role 8 represents the concept of primary importance in an intellectual relationship of ideas in a document. If there are a number of such intellectual relationships, there may be a number of terms in Role 8. When Role 8 is used on a number of terms to describe the intellectual relationships in a document, indexers must be certain that they determine if all of them can be used in one link or whether two or more links must be used to prevent false retrieval. Once the indexer has determined what term or terms should properly be assigned Role 8, selecting other terms and their proper roles will follow logically. The term(s) in Role 8 is the key idea in an indicative abstract statement of document content.

   Role 8 has the following meanings: the primary topic of consideration is; the principal subject of discussion is; the subject reported is; the major topic under discussion is; there is a description of.

2. Role 1 is used on terms for materials, devices, apparatus, and equipment which are subjected to processes or operations which modify or change the original identity, composition, configuration, molecular structure, physical state, or physical form of the materials. To be indexed in Role 1, one or more of these characteristics or properties must be changed.

   Role 1 is used on a form of energy when the purpose of the operation or system is to change the form of energy.

   Role 1 is used on terms for data and data quantities which are inputs to mathematical operations and systems.

3. Role 2 is used on terms for materials, alloys, mixtures, devices, equipment, apparatus produced in a process, operation, or system in which materials in Role 1 have had one or more of the following changed or modified: original identity, composition, configuration, molecular structure, physical state, or physical form.

   Use Role 2 on data and data quantities derived in a mathematical process or operation from input data indexed in Role 1.

   Use Role 2 on a form of energy to which a form of energy in Role 1 has been converted.

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4. Role 3 has the following meanings: undesirable component; waste; scrap; rejects (manufactured devices); contaminant; impurity, pollutant, adulterant, or poison in inputs, environments, and materials passively receiving actions; undesirable material present; unnecessary material present; undesirable product, by-product, co-product.

5. Role 4 is used primarily when a material, mixture, device, etc., is being manufactured, produced, fabricated, or is passively receiving an operation or process, and the content or intent of the information points out how or in what situation or manner it can be or is subsequently used.

6. Terms in Role 5 represent only materials present in or introduced into an operation, process, or other material, for the purpose of facilitating completion of the operation or process or to improve the qualities, conditions, or characteristics of the other material.

   Materials in Role 5 describe the gas, liquid, or solid in which or on which other materials are processed or operated. Role 5 materials may be present with input materials but are not themselves inputs in the sense of Role 1. In this sense they are "inert" or "neutral."

   Role 5 has the following meanings: environment; medium; atmosphere; solvent; carrier (material); support (in a process or operation); vehicle (material); host; absorbent, adsorbent.

7. Role 6 is used primarily on terms which represent properties, conditions, qualities, and characteristics serving as causes (independent variables). It may be used on terms for processes, operations, and systems to indicate how <u>using</u> or <u>not using</u> a process, operation, or system affects something in Role 7.

   Role 6 may be used on terms such as performance, reliability, and dependability, as qualities or influencing factors of equipment, devices, and apparatus.

   When two variables alternately or simultaneously affect each other, index both in Role 6 and in Role 7.

8. Role 7 is used almost exclusively on terms representing effects (dependent variables), including concepts such as characteristics, qualities, conditions, and properties as well as terms which describe the ability of materials or devices to do something or to have something done to them.

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9. Role 9 has the following meanings: passively receiving an operation or process with no change in identity, composition, configuration, molecular structure, physical state, or physical form; possession such as when preceded by the preposition of, in, or on meaning possession; location such as when preceded by the prepositions in, on, at, to, or from meaning location; used with months and years when they locate information (not bibliographic data) on a time continuum.

10. Role 10 is used to denote means to accomplish the primary topic of consideration or other objective, such as devices, equipment, apparatus, operations, processes, methods, procedures, techniques, test methods, analytical methods, process conditions (if quantified), materials, classes of uses of materials, forms of energy, and inspection methods.

11. Role 0 is used with bibliographic or source-identifying data. These are terms such as personal names of authors, corporate authors, dates of publication, and terms which describe the types of documents and which do not describe the informational content of the document.

    Role 0 is assigned to adjectives which modify terms in other roles.

    Terms in this role play only a minor role in assisting in retrieval; only adjectives in this role contribute to the fineness of discrimination in location of scientific or technical information. Terms indexed in this role, other than adjectives, are primarily description of administrative or control data.

    The names of companies; persons; other organizations, such as institutes, universities, and governmental agencies; publications; types of documents; professional societies; plants and laboratories will frequently be used as bibliographic data terms.

C. If possible, each key word will have a suffix numeral indicating the relative weight of the subject of the key word in describing the technical content of the report. The "weight factors" shall range from 0 (zero) to 3 (three), with the highest weight assigned to the suffix numeral "3". (Unless clear distinctions of weight or importance can be determined, only the suffix numerals "0" and "3" should be used.)

Attachment - 1

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Unclassified
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Security Classification

DOCUMENT CONTROL DATA - R&D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author)	2a. REPORT SECURITY CLASSIFICATION
Advanced Magnetoelectric Co., Sheboygan, Wisconsin	Unclassified
	2b. GROUP

3. REPORT TITLE

TEST REACTIONS IN INTERMETALLIC COMPOUNDS.
L. GRAIN BOUNDARY HARDENING IN NiGa.

4. DESCRIPTIVE NOTES (Type of report and inclusive dates)

Final report Feb 59 - Feb 60

5. AUTHOR(S) (Last name, first name, initial)

Smith, Daniel H. and Freeman, John D.

6. REPORT DATE	7a. TOTAL NO. OF PAGES	7b. NO. OF REFS
Apr 60	37	18

8a. CONTRACT OR GRANT NO.	9a. ORIGINATOR'S REPORT NUMBER(S)
AF 33(999)888	DM 60-1234
b. PROJECT NO. 6666	
c. Task 777777	9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)
d.	ASD TDR60-444,P1

10. AVAILABILITY/LIMITATION NOTICES

Foreign announcement and dissemination of this report by DDC is not authorized. Not releasable to foreign nationals.

11. SUPPLEMENTARY NOTES	12. SPONSORING MILITARY ACTIVITY
Report on Refractory Inorganic Nonmetallic Materials	Aeronautical Systems Division Wright-Patterson Air Force Base, Ohio

13. ABSTRACT

The phenomenon of grain boundary hardening has been explored for the CsCl structure intermetallic compound NiGa. NiGa has a homogeneity range of a few percent and it was possible to examine the effect of stoichiometry upon the grain boundary hardening due to preferential oxygen diffusion down grain boundaries. While some grain hardening was noticeable just below 50% Ga, the effect was much less pronounced than at 52% Ga. It was possible to estimate both bulk diffusion and grain boundary diffusion rates for oxygen. The results suggest that hardening is due to lattice distortions which arise from the formation of a Ga-O complex. (Author)

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14. KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
Theory	8	2				
Grain Boundaries	8,9	1				
Hardening	8,7	1				
Hardness	8,7	1				
Penetration	8	2				
Microstructure	8	2				
Crystal Lattice Defects	8	2				
Intermetallic Compounds	9	1				
Impurities			3,6	1		
Controlled Atmosphere			5	2		
Cooling			10,6	2		
Quenching (Cooling)			10,6	2		
Aging (Materials)			6	3		
Heat Treatment			10	1		
Diffusion			10	1		
Brittleness			7	1		

INSTRUCTIONS

1. ORIGINATING ACTIVITY: Enter the name and address of the contractor, subcontractor, grantee, Department of Defense activity or other organization *(corporate author)* issuing the report.

2a. REPORT SECURITY CLASSIFICATION: Enter the overall security classification of the report. Indicate whether "Restricted Data" is included. Marking is to be in accordance with appropriate security regulations.

2b. GROUP: Automatic downgrading is specified in DoD Directive 5200.10 and Armed Forces Industrial Manual. Enter the group number. Also, when applicable, show that optional markings have been used for Group 3 and Group 4 as authorized.

3. REPORT TITLE: Enter the complete report title in all capital letters. Titles in all cases should be unclassified. If a meaningful title cannot be selected without classification, show title classification in all capitals in parenthesis immediately following the title.

4. DESCRIPTIVE NOTES: If appropriate, enter the type of report, e.g., interim, progress, summary, annual, or final. Give the inclusive dates when a specific reporting period is covered.

5. AUTHOR(S): Enter the name(s) of author(s) as shown on or in the report. Enter last name, first name, middle initial. If military, show rank and branch of service. The name of the principal author is an absolute minimum requirement.

6. REPORT DATE: Enter the date of the report as day, month, year, or month, year. If more than one date appears on the report, use date of publication.

7a. TOTAL NUMBER OF PAGES: The total page count should follow normal pagination procedures, i.e., enter the number of pages containing information.

7b. NUMBER OF REFERENCES: Enter the total number of references cited in the report.

8a. CONTRACT OR GRANT NUMBER: If appropriate, enter the applicable number of the contract or grant under which the report was written.

8b, 8c, & 8d. PROJECT NUMBER: Enter the appropriate military department identification, such as project number, subproject number, system numbers, task number, etc.

9a. ORIGINATOR'S REPORT NUMBER(S): Enter the official report number by which the document will be identified and controlled by the originating activity. This number must be unique to this report.

9b. OTHER REPORT NUMBER(S): If the report has been assigned any other report numbers *(either by the originator or by the sponsor)*, also enter this number(s).

10. AVAILABILITY/LIMITATION NOTICES: Enter any limitations on further dissemination of the report, other than those imposed by security classification, using standard statements such as:

(1) "Qualified requesters may obtain copies of this report from DDC."

(2) "Foreign announcement and dissemination of this report by DDC is not authorized."

(3) "U. S. Government agencies may obtain copies of this report directly from DDC. Other qualified DDC users shall request through _____."

(4) "U. S. military agencies may obtain copies of this report directly from DDC. Other qualified users shall request through _____."

(5) "All distribution of this report is controlled. Qualified DDC users shall request through _____."

If the report has been furnished to the Office of Technical Services, Department of Commerce, for sale to the public, indicate this fact and enter the price, if known.

11. SUPPLEMENTARY NOTES: Use for additional explanatory notes.

12. SPONSORING MILITARY ACTIVITY: Enter the name of the departmental project office or laboratory sponsoring *(paying for)* the research and development. Include address.

13. ABSTRACT: Enter an abstract giving a brief and factual summary of the document indicative of the report, even though it may also appear elsewhere in the body of the technical report. If additional space is required, a continuation sheet shall be attached.

It is highly desirable that the abstract of classified reports be unclassified. Each paragraph of the abstract shall end with an indication of the military security classification of the information in the paragraph, represented as *(TS), (S), (C), or (U)*.

There is no limitation on the length of the abstract. However, the suggested length is from 150 to 225 words.

14. KEY WORDS: Key words are technically meaningful terms or short phrases that characterize a report and may be used as index entries for cataloging the report. Key words must be selected so that no security classification is required. Identifiers, such as equipment model designation, trade name, military project code name, geographic location, may be used as key words but will be followed by an indication of technical context. The assignment of links, rules, and weights is optional.

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